

LUNDY MARINE CONSERVATION ZONE ADVISORY GROUP

The Aims of the Group are: 1) to provide a nucleus of expertise on the marine habitats and waters surrounding Lundy; 2) to provide a forum for exchanging views on present and proposed activities around Lundy; 3) to safeguard the interests of all those who use the waters around Lundy and its natural resources; and 4) to advise the Lundy Management Forum on matters concerning the island's Marine Conservation Zone / Special Area of Conservation.

Established: 1985

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Notes of the 6th meeting of the Lundy Marine Conservation Zone Advisory Group

(formerly known as the Lundy Marine Nature Reserve Advisory Group, of which this was the 36th meeting, and prior to that the Lundy Marine Consultation Group, of which this was the 54th meeting)

held on **Tuesday, 30th October 2012** at the Ilfracombe & North Devon Sub-Aqua Club,
Ropery Road, Ilfracombe at 7.00 p.m.

Present:

Keith Hiscock	(KH)	Marine Biological Association – Chair
Derek Green	(DG)	Lundy Manager
Mel Parker	(MP)	Natural England
Andy Bell	(ABel)	UNESCO Biosphere Reserve, Braunton
Andrew Bengey	(ABen)	<i>Obsession</i> Charters
Chris Mandry	(CM)	British Sub-Aqua Club
Chris Hewitt	(CH)	Ilfracombe Sub-Aqua Club
Sarah Clark	(SC)	Devon & Severn Inshore Fisheries Conservation Authority
Leigh Hanks	(LH)	<i>Obsession</i> Charters

The Chairman welcomed all to the meeting. He also thanked Chris Hewitt and Ilfracombe Dive Club for making the club house available for the meeting.

1. Apologies for absence

Apologies had been received from: Mike Deaton (Appledore Sub-Aqua Club), Robert Irving (Lundy Field Society/Marine Conservation Society – Secretary), Nick Russell (English Heritage); Gay Tabor (Torrige District Council); Clive Pearson (charter skipper - *Jessica Hettie*); Tim Robbins (Devon & Severn Inshore Fisheries Conservation Authority); & Damien Board (Appledore SAC).

KH recognised that Keith Denby has not attended for several meetings and that the interests he represented were covered by others, therefore suggested dropping his name from the circulation list. SC suggested adding Geoff Huelin as an interested local fisherman as an addition. SC also suggested inviting Pia Bateman from the MMO.

2. Notes on the last meeting, held on 24th April 2012

Copies of these had been circulated prior to the meeting. Minor correction in item 4 post script add “Donald Malone” as joint warden. Otherwise agreed as true record and they were signed as approved by the Chairman.

3. Matters arising from the meeting held on 24th April 2012 not covered in the agenda.

None

4. Matters arising from the last Lundy Management Forum meeting

- 4.1. DG summarised the agenda items which were discussed at the last meeting of the Forum which took place on 26th April 2012 on Lundy (two days after the last meeting of the Advisory Group).
- 4.2. The meeting was attended by approximately 20 individuals. There was a presentation from RWE on the Atlantic Array proposals. The follow-on meeting by the agencies agreed that each will make its own reply independently since there were different responsibilities and different viewpoints. Presentations were made by students who have carried out studies on the MCZ that had been sponsored by the Lundy Field Society and Natural England. These studies included cetacean use of Lundy and seal scat sampling to investigate the diet of seals at Lundy. (MP will circulate the summary of the studies).
- 4.3. The marine conservation plan and management agreement was discussed.
- 4.4. IFCA highlighted the increase in scallop dredging around the area arising from displacement from Cardigan Bay (& Lyme Bay?). Environment Agency fisheries staff have been seconded to the IFCA to support enforcement and resources assessments in the North Devon area.
- 4.5. English Heritage presented on update on licensing processes. Boat skippers/owners are responsible for registering their divers.
- 4.6. Keith Hiscock had provided a Lundy Field Society update.
- 4.7. Terrestrial issues were covered in the meeting.

5. Report from the Reserve

- 5.1. DG presented the report (Annex A) in the absence of any wardens currently being employed on the island at the time of the meeting. Progress has been made on finding a replacement warden who it was hoped would be in post by Christmas. There had been discussion over the relative proportion of roles between island duties and marine work. NE and Landmark Trust are in negotiations for the next grant and it is expected that the time dedicated to marine work will increase. It was noted that the recent wardens had improved data handling, making analysis easier.
- 5.2. The wardens' report was circulated. KH sought clarification of the acronym AOB in the report. It was believed to be "Any Other Birds". This will be checked. The Chairman complemented the team on a good effort in trying to gather seal scat which will be analysed for prey, stress related hormones and plastics. KH pointed out that the eating habits of seals by stripping out livers for example would make some prey identification problematic. He referred to the Skomer seal research in 1999 which he would draw to the attention of Kimberly Bennett at Plymouth University.
- 5.3. NTZ infringements. There has been signs of scallop dredging inside the NTZ and definitely in the MCZ which bans mobile gear. SC said she would raise awareness within North Devon Fishermen's Association and Welsh counterparts. She will send

the information on the Zoning Scheme and any relevant seasonal closure that might be put in place on all scallop extraction (as is being considered in S. Devon). IFCA will disseminate the information to the known boats. DG will forward cards and bylaw sheets. AB suggested making a GPS layer available for chart plotters. CM asked if more policing was possible. It was suspected that most infringements will be at night. IFCA are looking at better ways to apply bylaws and improving conservation measures by reviewing bylaws. IFCA is now very involved in the review of fisheries within marine SACs. Vessel Monitoring Systems were the preferred option where the location of a fishing vessel is registered every 2 minutes. The trial in Lyme Bay will provide valuable lessons.

- 5.4. KH was pleased with the warden's report on the scarlet & gold star coral monitoring. He noted that the numbers had remained roughly the same and recommended that permanent markers for fixing quadrats would improve inter-annual consistency in surveying.
- 5.5. DG was asked about the job description for the wardens. He reported that discussions are underway with NE and various options are being explored working down from two full-time wardens with 80% funding from NE to one full time warden and an assistant for 9 months.

6. Atlantic Array

- 6.1. Each agency should identify and clarify its own position; there will not be a group position statement. Organisations had responded to the draft Environmental Statement. A response from RWE to each of the submissions is expected. NT had expressed its strong opposition to the scheme. The submission of the formal application to IPC is likely to be delayed until spring 2013. Lundy will make its case in response to the registered application.
- 6.2. RWE have installed a Met. station on Lundy which when working will provide continuous data that can be openly accessed. (Note that Lundy weather on the website is still functioning)

7. Natural England's interests (Mel Parker, Natural England)

- 7.1. MP reported that NE with the EA have been sampling shallow sub-tidal sediment areas for toxicity. High levels of chromium, copper, lead and nickel have been identified, probably coming down the Severn Estuary. Lack of resources meant that the MarClim survey had not been completed. The MSc theses summary reports will be circulated. NE are expecting to commission a re-survey of the NTZ. DWT and WWF have expressed the wish to collaborate and contribute resources. A methodology is being drawn up.
- 7.2. The MCZ management plan is in limbo at the moment, a draft is expected end of 2013 after the review of EU marine site management. Robert Irving is analysing images of *Leptopsammia* sunset cup corals taken in July at the Knoll Pins by KH. KH noted a reduction in adults and an increase in juveniles, but an overall declining trend in total numbers. He also noted Weymouth carpet corals (a nationally scarce species) were also present in some of the images.

- 7.3. The 6 year SAC report indicated that most conservation features were in favourable condition with the exception of the sunset cup coral and the pink seafans. Seacaves need more research to confirm their status.
- 7.4. National MCZ process; NE has given its advice to Defra along with JNCC. Regarding Lundy, the advice was in line with the Finding Sanctuary recommendations. Defra will launch a public consultation after December 2012.
- 7.5. Liz Bailey is putting Lundy shore survey data into the Marine Recorder database to ensure a solid information source on species abundance data for the reserve. She suggested that data from visitor logbooks could be added after being verified. DG urged some caution on the time demands that might take from wardens. There was a suggestion of preparing an LFS leaflet to urge people to report sightings as well as 'wanted' posters featuring certain species. Other suggestions included a members area of the website to upload sighting data to ease the process of digitising the information. It was agreed that organisations need to improve the co-ordination of recording data and events, ideally electronically. KH thanked ABen for the records of cetacean and other megafauna sightings provided from the two *Obsession* charter boats.
- 7.6. A short summary report of the cetacean monitoring undertaken by Natalie Squires of Plymouth University for her M.Res degree is attached as Annex B.

8. Devon & Severn IFCA's interests (Sarah Clark, D&S IFCA)

- 8.1. Lobster tagging had been carried out in May to July with improved streamer tags. Approximately 500 tags had been applied. September tagging was not carried out due to bad weather. Re-capture inside the NTZ was good; not many recaptures were reported by fishermen outside the NTZ. The IFCA has increased the reward for recovered tags to £2.50 in an effort to improve the reporting rate. New tags will help longer term identification. (http://www.devonandsevernifca.gov.uk/North_Devon_Lobster)
- 8.2. Larval collection. D&SIFCA hold the national record for collecting lobster larvae (they had caught one). A juvenile lobster data gap will be addressed using green crab traps and Go-pro camera surveillance. IFCA will be seeking to host a conference on SAC management of fisheries as part of the EU marine sites review of management to learn from other Authorities.
- 8.3. KH asked if brown crabs had been discarded in the Landing Bay. It was clarified that crabs had been placed into keep pots in the Bay but not released.
- 8.4. KH recommended that NE speak with Skomer MNR personnel on some of the research and monitoring methodologies that had been developed there for sublittoral areas.

9. Lundy Book

- 9.1. KH informed the Group that the book describing 40 years of marine conservation on Lundy was now published and available to purchase. Those who had contributed content were thanked and he was already getting good feedback on the publication. The Chairman expressed thanks to Tim Davies of DJEnvironmental for the design work, Short Run Press in Exeter for printing, the sponsors and the contributors, and

especially to Chris Mandry for inspiring the book in the first place.
(<http://www.lundy.org.uk/publications/#40years>)

10. Any Other Business

- 10.1. CM suggested that Coastwise might be invited to join the group as an organisation interested in the marine biodiversity of North Devon. Robert Irving to contact Marjorie Heath.
- 10.2. KH asked if there was any news on the sediment infaunal richness report from the sampling which took place during the summer. MP advised that was work in progress.
- 10.3. ABeI. advised that an EU project called ValMER was using the North Devon Biosphere Reserve as a case study for valuing marine ecosystem services. The two-year project has just started. Lundy would be automatically included since it is within the Biosphere Reserve. The study is likely to focus on non-quota species and is unlikely to involve primary data collection. ABeI will keep the group informed/involved. [See Annex C].
- 10.4. SC. Swansea University has been undertaking an analysis of the 'shell disease' status of crab and lobster populations, both within and outside the NTZ, under a project known as SUSFISH. (The work is part of a collaborative project between Welsh and Irish Universities investigating the impacts of climate change on commercial shellfish productivity within the Irish Sea - <http://www.susfish.com/index.php/workPackagesDetails/5>). The disease is not seen on Lundy and the only lesions reported were results of territorial battle scars. They had also been looking for the presence of the lobster louse (a gill parasite) and gaffkaemia (a bacterial disease of lobsters). These are not pathogenic but likely to be stressors on the population. A paper from this work has recently been published: (<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0051615>).
- 10.5. DG said that he would be grateful to know if/when any research was planned/going on.
- 10.6. Andrew B mentioned a coaster ship he had witnessed anchoring too close to the *Iona II* - they moved on request. KH expressed his thanks to *Obsession*.
- 10.7. *Obsession* suggested that single fee for air cylinder refilling would be more pragmatic than the current charging structure. DG said he would look into it.

11. Suggested date of next meeting: Tuesday 23rd April 2013, 19:00 hrs Ilfracombe.

Addendum: Robert Irving would like to express his thanks to Andy Bell for taking the notes of this meeting in Robert's absence].

Annex A. Wardens' Report (May 2012 – October 2012)

Marine

Grey Seals (*Halichoerus grypus*)

A total of 7 surveys looking at the number of grey seals (*Halichoerus grypus*) around the island around low tide have been carried out since the start of May 2012. The maximum number of animals counted was 200 individuals, while the minimum was 112, however this count was carried out from the MS Oldenburg during a round the Island trip, and was felt to be a less accurate way than by using the RIB as was used in every other survey.

Summary of Seal Surveys undertaken during the Summer 2012:

Date	Total Number of Seals	Number of Males	Number of Females	Number of Juveniles	Unknown sex/age
08-Apr-12	177	9	120	3	55
23-May-12	127	13	92	1	21
18-Jun-12	186	11	7	15	153
09-Jul-12	181	4	89	50	38
20-Aug-12	200	9	0	19	127
31-Aug-12	188	22	54	67	45
20-Sep-12	112	5	18	21	68
21-Sep-12	162	14	49	43	56

The biggest concentration of animals was always up around the North East of the Island, from just North of Gannets Rock round to the Hen and Chickens. Was rare to spot many animals on the west coast of the island, however believed could be missing animals hauled out in sea caves here, the swell that tended to be found on this side island prevented us being able to survey as thoroughly as was possible on the East coast.

Throughout September and October more surveys were carried out to attempt to gain an accurate estimate of the number of pups born around Lundy. Land was accessed from the RIB to carry this out. The first pup spotted was on 26th August 2012, at Montagu' Step area, however highly probable that pups may have been born before this date and just not observed. Up until the 20th of October 2012 a minimum of 35 pups were born around Lundy. It was felt this was an underestimation of the total number of pups born due to the fact that a large proportion of potential pupping sites around the coastline could not be checked.

Searches were also carried out to look for seal scat samples; these have involved accessing seal haul out sites both from land and from the boat. Whenever land has been accessed, to look for pups and such like, searches for scats have also been carried out. Unfortunately although a fair amount of time and effort has been spent searching for scats, only 4 have been found in total. Wardens feel it will be difficult to locate many scats on Lundy as a result of the large tides experienced here, seal haul out sites get washed at every high tide, so not a large time window of opportunity to find them.

Entangled seals were spotted on numerous occasion, on 5 of the 7 seal surveys carried out at least one entangled individual was spotted, with 3 different animals showing entanglements on the survey carried out on 20-August-12. Apart from during the seal surveys, there were two other reports of animals being spotted showing entanglements. One of these was by the team who were over carrying out a cull of feral stock at start of October, they reported that it had a very large amount of green fishing net attached to it, this animal was not spotted by the wardens.

Cetaceans

From the 12th May Natalie Squire and Katy Hodgson-Ball, MSc students from Plymouth University, spent an 8 week period, carrying out cetacean observation from Lundy whenever the conditions allowed. The data they collected was incorporated into their projects. Natalie had intended to use data from the C-POD deployed on the wrecks of the Robert and the Ethel, unfortunately they had not been set up correctly so did not record data for the period from June through to August. After the problems concerning their set up was investigated and fixed so they were operating correctly, both C-PODs were redeployed in early September. These should be retrieved in early December, to ensure the battery life will not run low on them.

Throughout the summer observers from Marine Life carried out monthly surveys from the MS *Oldenburg* on its passage to Lundy, being lucky enough to spot Risso's dolphins (*Grampus griseus*) on their trip on 15th September. The crew of the *Oldenburg* also kept a record of any cetaceans spotted; this can be seen in appendix 1. Sightings noted in the Tavern logbook can be seen in appendix 2. Sightings from the Tavern logbook are obviously influenced by how much effort people staying on the island invest into carrying out cetacean observation, and if they record them in the log book or not. However from what can be seen from this, and is supported by the observations from the *Oldenburg*, it would appear that was a peak in cetacean activity around the island towards the end of May. From the 27th – 30th May there were regular reports of Common Dolphins (*Delphinus delphis*), Harbour Porpoise (*Phocoena Phocoena*) and Minke Whale (*Balaenoptera acutorostrata*), and also one report of Bottlenose dolphin (*Tursiops truncatus*) all from Lundy. Common dolphins were by far the most commonly spotted cetacean both from the *Oldenburg* and from Lundy itself.

Basking Sharks (*Cetorhinus maximus*)

There were 3 reported sightings recorded in the Tavern Logbook of Basking sharks (*Cetorhinus maximus*) around Lundy during the summer period. The wardens themselves never observed any individuals. The sightings were on the following dates;

- 4-June-2012 - 17:00BST - 1 Basking Shark in Gannets Bay.
- 6-July-2012 - 08:00BST - 2 Basking Sharks, 1 mile off East Coast.
- 29-July-2012 – 14:30BST – 1 Basking Shark off Quarry Beach.

Ocean Sunfish (*Mola mola*)

The wardens spotted a Sunfish (*Mola Mola*) on 2 separate occasions, on the 10th August 2012 just north of Gannets Rock while carrying out a seal survey, and from the jetty on 6th September. These were the only recorded sightings of sunfish from Lundy, one was spotted from the MS *Oldenburg* just as it departed Ilfracombe on 15th September.

Portugese Man-of-War (*Physalia physalia*)

A specimen was washed up on Landing Beach on 13th October 2012. Had been numerous reports of sightings around the North Devon coastline prior to this, including some from visitors on Lundy.

Cup Corals

On 9th September at low tide the long term monitoring sites in the Devils Kitchen, referred to as sites 1 & 2, were visited to carry out monitoring of the Scarlet and Gold Star Coral (*Balanophyllia Regia*) and Devonshire Cup Coral (*Caryophyllia smithii*). Photographs were taken, total counts taken and measurements of some individuals carried out. This initial visit was only partly successful in being able to locate with certainty the corals to measure. After

this visit, using the photographs taken at this visit and previous years photographs, individual corals were matched up to see if they were still present, from this was seen that had been a change in the colonies over time, with some individuals having been lost, and new ones also present. Site 1 was revisited on 16th October, to allow for more individuals to be measured. Had been intended to do the same at site 2 the next day, however the weather deteriorated making this not possible. So unfortunately not many individuals have been measured from this site this season. The total counts of individuals at each site was as follows;

- Site 1 – 39 Cup Corals in total (6 Devonshire, 33 Scarlet & Gold Star Corals)
- Site2- 94 Scarlet & Gold Star Corals.

The wardens felt may have been errors in the past with different individuals being mistaken as the same coral and measured from one year to the next. Would recommend taking a new picture at least every two years and matching up individual corals on this before doing the count. The wardens had also intended to put two screws in the top of each site, this will allow the quadrat to be hung in same position every year, helping in locating individual corals. Unfortunately the low tide when they had intended to do this was very rough weather making it not possible. This is something they would recommend doing when low tides and calm weather allow. A count and measurement of corals at site 1 & 2 should take place when equinox low tides in Spring 2013.

Wireweed (*Sargassum muticum*)

Sargassum is an invasive introduced seaweed found in the waters around Lundy, and efforts have been made since it was first identified around Lundy to remove it to attempt to stop it spreading. This summer a total of 197 plants were removed, mainly in the Devils Kitchen. Unfortunately no diving was able to be carried out to allow for greater amounts to be removed.

Temperature Loggers

The temperature logger on the wreck of the *Robert* was retrieved on 9th of September, and replaced with another logger at the same time. The logger on the jetty was retrieved and replaced with another one on the 18th October. The data was downloaded from the logger that was deployed on the *Robert* without any problems. Unfortunately it was not possible to download the data off the logger that was retrieved from the jetty, the company that manufacture them (Vemco) have been contacted to enquire if they can retrieve the data from the logger, they have stated they can most likely retrieve the data and then e-mail it to us, if the logger is sent out to them, which it has been. They feel the issue may be to do with low battery life in the logger, they have records of us buying them in 2008, while the records we have state 2010, batteries should last around 5 years. If they are correct may well be an issue with all the loggers we currently have, so may want to look at changing them all. This will involve having to upgrade to the new type of logger they manufacture, and also getting a new interface box to allow the data to be downloaded from them. The loggers should next be retrieved during August/September of 2013, however may want to do earlier if feel is an issue with battery life in the loggers.

Lobster Tagging Research

Sarah Clarke from the Devon and Severn IFCA (Inshore Fisheries & Conservation Authority) was over from 15th-17th May and again from 8th-11th July carrying out tagging and mapping of the lobster population around Lundy. The vessel "Our Jenny" skippered by Geoff Huelin was used for this work. They had intended to come back over and do more work in September, however had to cancel this as a result of poor weather.

Natural England Benthic Grab Study

From the 3rd-6th July a team from Natural England and the Environment Agency, led By Benjamin Green, came over to carry out a survey of the benthic species around Lundy. This involved doing benthic grab samples at a total of 17 sites around the Island, 15 on the east coast and 2 over on the west side.

Diving

In total 319 divers booked to use the diving facilities during the summer of 2012, raising over £3,700 from air fills alone. The Lundy Splash in did not take place this summer, it was organised to take place on two separate occasion, unfortunately however the weather on both these occasion led to it having to be cancelled. The event has been pencilled in to take place on Saturday 29th June 2013, and all companies that agreed to support the event this year are happy to support it again next year.

Protected Wreck Licences

Access to dive the protected wrecks of the *Iona II* and the Gull Rock is allowed only if a permit licence has been issued by English Heritage. It is a requirement for any charter boat skippers and individuals who hold a licence to pass on names of all divers that accessed the sites to English Heritage, and supply an annual report of the wrecks condition. Current licence holders are listed below.

Iona II – Current licence holders are:

Visit Licences -Derek Green
 -Andrew Bengoy
 -Nicola Saunders
 -Fiona Hampton Matthews
 -Steve Ashton
 -Paris Daykin-Iliopoulos

Gull Rock – Current licence holders are:

Visit Licences -Derek Green
 -Andrew Bengoy
 -Nicola Saunders
 -Steve Ashton
Survey Licences -Paris Daykin-Iliopoulos

On 18th July at 13:15BST the crew of *Obsession II* reported the vessel *River Trader* anchored between the *Iona II* and the *Robert*, and believed it may have dragged its anchor over the wrecks. This was reported to Alison James at English Heritage.

Moorings

Mooring licences have been issued to the following boats for 2012/13 season

- Appledore SAC
- *Obsession II* (Andrew Bengoy)
- *Jessica Hettie* (Clive Pearson)
- Ilfracombe SAC (2 moorings)
- *Ithcus* (Ivan Bate)
- *Willow* (Jon Fanthorpe)
- *Frolica* (Roy Lancaster)

NTZ Infringements

On Saturday 29th September Andrew Benguey on *Obsession II* reported that he had spotted a RIB with people angling from it in Gannets Bay, within the NTZ. He said he approached them and explained the regulations to them, giving them a leaflet showing the zoning of the protected areas around Lundy. They apologised and immediately stopped fishing and moved out of the area, explaining they had not been aware of the regulations. It was felt no further action was necessary. This was the only recorded or reported infringement during the summer season.

Seabird monitoring

Due to staff changes this year, not as much seabird monitoring was done as I would have liked. Kittiwake productivity was monitored at 2 colonies, Aztec Bay (F7 in seabird site register) and Aztec Zawn (site F16 in site register). Productivity at those sites was as below. Some fierce storms took out a lot of the lower nests at both sites, but these would have been younger and less experienced birds.

Colony	Hatching success (chicks/pair)	Breeding Success (Chicks/pair)
Aztec Bay (n=41)	0.85	0.17
Aztec Zawn (F16) (n=100)	0.47	0.29

Guillemots were monitored at long roost colony but time was not available this season to get complete coverage there.

Puffins had their best season yet, with a peak count of 171 birds seen around the island on one day. This is almost double the previous seasons count of up to 60 birds. AOBs were not recorded due to the amount of time required, but birds were seen prospecting for nest sites at several new locations, including Long Roost, south of last year's nest site and to the east of the North Light on the North Coast. Repeated sightings were noted along the northern east coast too.

A late survey of the whole island for Fulmar chicks produced a count of 58 chicks near to fledging.

Oxford University were on the island in August for 2 weeks carrying out further tracking work on Manx shearwaters, deploying GLS and GPS devices to learn more about the birds movements and feeding ecology.

David Price, Peter Slader, Tony and Richard Taylor were here for a total of two weeks carrying out Manx shearwater chick ringing in late August and early September, ringing 251 new chicks and capturing a total of 299 birds in total. Both wardens spent time out assisting both the tracking and chick ringing work, with an extra month of trapping work being carried out by the wardens to retrieve a few extra GPSs and GLSs.

Education and media

Warden led events

Walks, talks, rock pool rambles, snorkel safaris were carried out throughout the summer months, although snorkel safaris did not commence until the end of June as the wardens needed to attend a snorkel instructor course. 26 talks and 25 walks were given through the summer, along with 12 snorkel safaris.

School visits

Eight school groups visited the island this year and were given activities with the wardens

including rockpool safaris, guided walks and slide shows. 2 scout groups visited and both these groups were given snorkel safaris. In total, 193 children and 51 teachers and helpers attended these events.

Other visits

Seven other organisations visited the island and were given a talk and/or guided walk. These included Ambios, CLA (Country Land and business Association), MCS, Environment Agency and Sail for Poppies.

Discover Lundy

This was a week of events organised and run by the LFS from 26th May until 2nd June. It was very well attended by many on the island and provided a great opportunity to increase the biological and historical knowledge of the island. Talks, walks and presentations were given by a wide variety of LFS members on all manner of subjects from moths, wild flowers, birds and photography.

Media Visit

During the Summer we had three different film crews over, a team from ITV Westcountry doing a piece on Islands, BBC Wales doing a bit on MCZ and NTZ. There was also a team over filming a piece on a glider they had flown over for the series "Toys". We were contacted by people from the One Show (BBC) enquiring about coming over to do filming in September but it never came about, they may be in contact next season. We also had a journalist David Mitchell over researching for an article he planned to do on MCZ and NTZ for the Angling Trust (?Times – RI).

Appendix 1 :- Cetacean Sightings from MS *Oldenburg* April- October 2012

Date	Time (BST)	Latitude	Longitude	Species	Total No.
31-Mar-12	10:40	51 11.80 N	04 18.00 W	Harbour porpoise	2
22-May-12	16:30	51 08.60 N	04 31.30 W	Bottlenose Dolphin	8
26-May-12	18:55	51 06.30 N	04 19.10 W	Common Dolphin	30
29-May-12	10:30	51 12.26 N	04 11.94 W	Harbour porpoise	1
29-May-12	11:20	51 11.37 N	04 27.26 W	Common Dolphin	30+
29-May-12	11:30	51 12.00 N	04 30.40 W	Common Dolphin	100+
29-May-12	16:45	51 10.42 N	04 32.51 W	Bottlenose Dolphin	10
29-May-12	17:00	51 10.69 N	04 28.39 W	Common Dolphin	100-300
29-May-12	17:40	51 11.53 N	04 16.67 W	Harbour porpoise	2
31-May-12	11:40	51 11.32 N	04 34.45 W	Common Dolphin	12+
31-May-12	16:45	51 10.36 N	04 32.44 W	Common Dolphin	12+
31-May-12	17:00	51 11.11 N	04 26.09 W	Common Dolphin	60+
12-Jun-12	17:00	51 11.13 N	04 21.95 W	Common Dolphin	30+
14-Jun-12	17:15	51 11.94 N	04 19.11 W	Common Dolphin	10+
19-Jun-12	10:10	51 12.39 N	04 09.57 W	Harbour porpoise	1
28-Jun-12	11:45	51 12.22 N	04 35.27 W	Common Dolphin	6+
28-Jun-12	17:10	51 12.00 N	04 22.27 W	Common Dolphin	7+
30-Jun-12	10:05	51 12.53 N	04 09.19 W	Harbour porpoise	2
04-Jul-12	10:40	51 11.74 N	04 20.16 W	Common Dolphin	3+
04-Jul-12	11:25	51 10.02 N	04 36.62 W	Common Dolphin	20+
05-Jul-12	15:20	51 09.33 N	04 39.96 W	Common Dolphin	3+
05-Jul-12	16:40	51 08.84 N	04 34.33 W	Common Dolphin	3
05-Jul-12	16:45	51 08.16 N	04 31.66 W	Common Dolphin	4
05-Jul-12	16:55	51 07.64 N	04 29.57 W	Common Dolphin	6
09-Jul-12	10:20	51 08.98 N	04 29.20 W	Common Dolphin	20
10-Jul-12	11:20	51 11.07 N	04 30.09 W	Common Dolphin	2
21-Jul-12	12:30	51 10.51 N	04 23.70 W	Harbour porpoise	2+
21-Jul-12	12:40	51 10.31 N	04 20.24 W	Common Dolphin	50+
21-Jul-12	15:50	51 12.10 N	04 25.79 W	Harbour porpoise	2
21-Jul-12	16:10	51 11.39 N	04 31.80 W	Common Dolphin	30+
21-Jul-12	18:30	51 06.83 N	04 21.89 W	Common Dolphin	15+
24-Jul-12	10:25	51 08.10 N	04 28.76 W	Common Dolphin	4
26-Jul-12	17:53	51 12.47 N	04 11.62 W	Harbour porpoise	5
28-Jul-12	12:35	51 12.76 N	04 17.98 W	Common Dolphin	12+
31-Jul-12	16:45	51 11.29 N	04 29.14 W	Common Dolphin	8+
14-Aug-12	17:15	51 11.00 N	04 19.00 W	Common Dolphin	30+
18-Aug-12	16:20	51 12.99 N	04 28.58 W	Common Dolphin	30+
18-Aug-12	16:55	51 10.83 N	04 37.47 W	Harbour porpoise	2
18-Aug-12	18:45	51 12.90 N	04 15.90 W	Common Dolphin	7
21-Aug-12	18:05	51 06.21 N	04 21.38 W	Common Dolphin	12+
23-Aug-12	17:06	51 11.41 N	04 22.92 W	Common Dolphin	3
15-Sep-12	16:20	51 08.18 N	04 28.38 W	Risso's Dolphin	2
15-Sep-12	17:00	51 05.70 N	04 17.66 W	Harbour porpoise	2
23-Oct-12	11:11	51 12.00 N	04 22.43 W	Common Dolphin	60+

Appendix 2:- Cetacean Observations from Tavern Logbook.

DATE	Time	SPECIES	No. Obs	LOCATION
01-Apr-12		Common Dolphin	15-20	Jenny's Cove
12-Apr-12		Porpoise	3	SW point
16-Apr-12	10:30	Common Dolphin	100+	Battery, west coast
16-Apr-12	10:30	Minke Whale	1	Battery, west coast
18-Apr-12		Porpoise	1	Shutter Point
22-Apr-12	PM	Porpoise	2	Off Rat Island
23-Apr-12		Porpoise	1	Off East coast
08-May-12	09:30	Common Dolphin	40+	Off Quarry beach
27-May-12	PM	Common Dolphin	~30	Off East coast
28-May-12	10:00 - 11:00	Minke Whale	1	50 10.642N, 04 37.102W
28-May-12	08:00	Common Dolphin	~30	Off East coast
28-May-12	PM	Porpoise	1	off West side
28-May-12	15:00	Minke Whale	1	off NE point
28-May-12	07:00	Common Dolphin	~30	Off Jenny Cove
28-May-12	15:00-16:00	Common Dolphin	~60 (total, 5 groups)	off East side
28-May-12	09:00	Bottlenose Dolphin	5 adults, 2 calves	East side of 3/4 wall
28-May-12	14:00	Common Dolphin	~12	Just below North Light
29-May-12	07:00	Porpoise	1	Jenny's Cove
29-May-12		Porpoise	1	Quater Wall Copse, very close in
29-May-12	08:15-08:45	Common Dolphin	~60	Jenny's Cove
29-May-12	09:00	Common Dolphin	~12	off East side
29-May-12	21:00	Common Dolphin	~12	off SW point
29-May-12		Common Dolphin	~200	Off East coast
29-May-12	09:00	Minke Whale	1	Off Terraces, East side
29-May-12	11:00	Minke Whale	1	Off East coast
29-May-12	16:30-17:37	Minke Whale	1	Off East coast
30-May-12	11:00	Common Dolphin	12-15	Landing Bay
30-May-12	11:00	Minke Whale	1	Off SE End
30-May-12	06:15-06:55	Minke Whale	1 (poss 2nd present, not able to confirm)	Jenny's Cove
30-May-12	06:15-07:30	Porpoise	2	Jenny's Cove
30-May-12		Common Dolphin	~150	Off Battery to Long Roost
02-Jun-12	19:40	Common Dolphin	7/8	Off East coast
04-Jun-12		Dolphin sp.	8-10	Off Gunnery Point
04-Jun-12	21:30	Harbour porpoise	12	Off Tibbetts Point
04-Jun-12	21:30	Common Dolphin	10	Off Tibbetts Point
04-Jul-12		Dolphin sp.	~12	Off Rat Island
07-Jul-12		Common Dolphin	3	Off Rat Island
22-Jul-12	14:15	Dolphin sp.	2	Near East Bank, seen from Castle
22-Jul-12		Dolphin sp.	3	Gannets Bay
29-Jul-12	07:55	Harbour porpoise	5	Observed from Castle Green
30-Jul-12	10:15	Dolphin sp.	~12	Off North Light
31-Jul-12	14:06	Dolphin sp.	2	500m east of VC Quarry
01-Aug-12	15:55	Harbour porpoise	2	SE of Castle Green
03-Aug-12	08:55	Harbour porpoise	3	Off Battery
04-Aug-12	12:55	Common Dolphin	30-40	off Castle Green
05-Aug-12	11:22 - 12:05	Harbour porpoise	1	Off Devils Limekiln
06-Aug-12	10:34	Harbour porpoise	6	Off Quarry beach
06-Aug-12	16:05	Common Dolphin	~10	NE of Castle Green
06-Aug-12	20:00	Common Dolphin	~20	Off Brazen Ward
09-Aug-12	10:30	Harbour porpoise	7	NE of Castle Green

09-Aug-12	11:37	Common Dolphin	~14	800m N of Castle Green
09-Aug-12	13:37	Harbour porpoise	4	300m SW of Shutter Rock
09-Aug-12	15:20	Harbour porpoise	3	500m SE of Castle Green
09-Aug-12	16:00	Common Dolphin	~18	800m NE of Castle Green
09-Aug-12	20:20	Common Dolphin	10	In Landing Bay
09-Aug-12	12:30	Common Dolphin	~5/6	1/2km of Landing Bay
09-Aug-12	16:00	Common Dolphin	8-10	1.5km NE of Landing Bay
08-Sep-12	PM	Porpoise	1	off West side
19-Sep-12		Porpoise	2	Off South end
20-Sep-12		Porpoise	3	Off South end
21-Sep-12		Porpoise	15-20	Off North Light
11-Oct-12		Minke Whale	1	3-4 m off Castle

Annex B

Using Passive Acoustics to Survey Lundy Island's Near Shore Waters for Small Odontocetes

By Natalie Squires (MRes Applied Marine Science)

Aims and objectives:

This study was conducted to provide background information on the small odontocete species using the waters of Lundy Island, which may be affected by the proposed Atlantic Array windfarm. The data collected can be used in assessing the impacts of the wind farm on such species, and as a preliminary study to ascertain the long term implications of such developments. The relative abundance and occurrence of small odontocete species was investigated using acoustic data from two C-PODs and visual shore based surveys from 4 observation points on Lundy. The aims of the project were to:

1. Identify and quantify the key odontocete species utilising the near shore waters of Lundy Island.
2. Describe the spatial and temporal distributions of these species in response to tide, tidal flow, average sea temperature and time of day

Methods:

Natural England provided two C-PODs that were maintained by Lundy Island staff. The first C-POD was attached to the wreck of the MV *Robert* off the eastern coast of the island by divers on 25th July 2011 and was retrieved on 10th October 2011. The second C-POD was attached to the wreck of the *Ethel* off the south-west coast of the island by divers on 30th July 2011 and retrieved on 14th November 2011. Data were continually recorded for 67 days by the *Robert* C-POD and 99 days by the *Ethel* C-POD before battery life expired. Both C-PODs were re-deployed during May 2012 for the duration of the 2012 field work period with the intention of comparing acoustic and visual data. However due to a technical error (it is believed the C-PODs were set up incorrectly) no acoustic data were recorded for this time. Visual observations were made from four cliff top locations around the island between May 2012 and July 2012. A theodolite was used to make accurate tracks of the positions of odontocetes as they were observed which were later plotted onto a map of Lundy Island using GIS.

Results:

The majority of the species detected by the C-PODs were Harbour porpoises (*Phocoena phocoena*) with some dolphin detections which, based on previous records from visual observations, are most likely to be the species common dolphin (*Delphinus delphis*). The overall findings from the study revealed that significantly more porpoises were detected by the C-POD at the South end of the island than the C-POD on the eastern side. For all species detected by the two C-PODs, a generally decreasing trend in acoustic activity was apparent from August through to September and October. This pattern coincides with the average water temperature which showed an increase through the first few weeks of sampling before steadily decreasing. Overall more porpoise detections were made during spring tides than neap tides and more specifically, during the ebb tidal phase (see figure 1). These data indicate that porpoises are utilising the strong tidal rip at the south end of the island for foraging. Conversely, dolphins were detected regularly on the eastern side of the island but very rarely on the south end and showed no apparent reaction to tidal state.

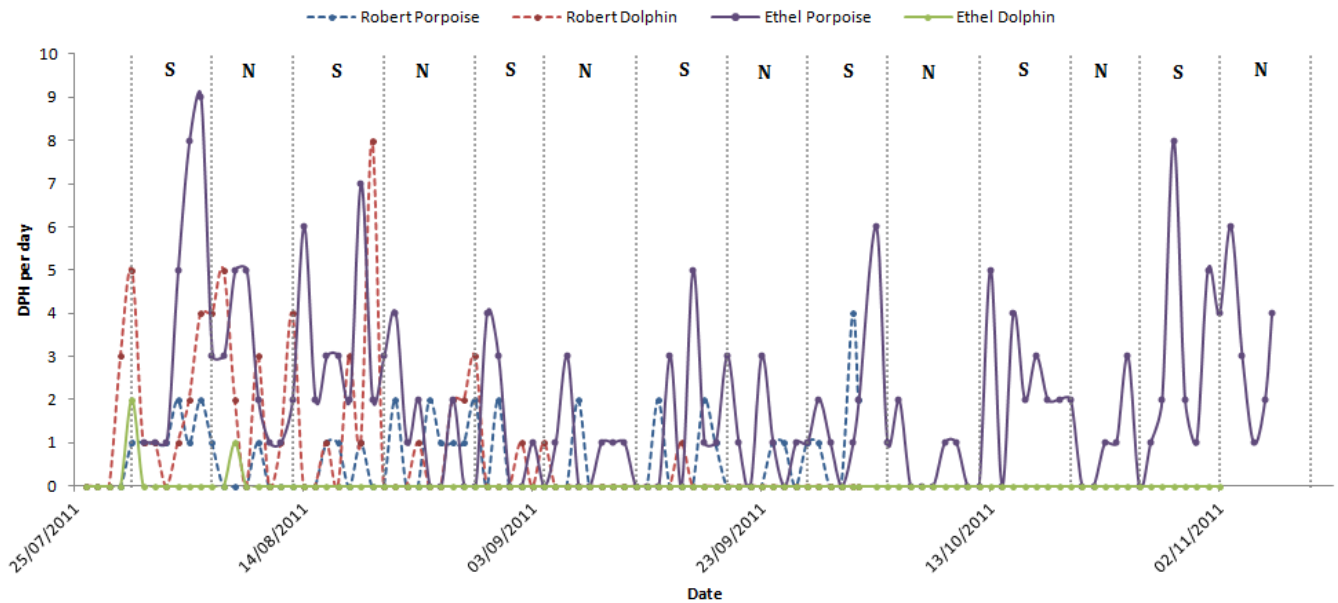


Figure 1. Summary of detections (detection positive hours per day (DPH)) of dolphins and porpoises detected by the Robert and Ethel C-POD's with spring and neap tides for the duration of the sampled period. Note the Robert C-POD battery life expired on 25/09/2011 and no further recordings were made after this date.

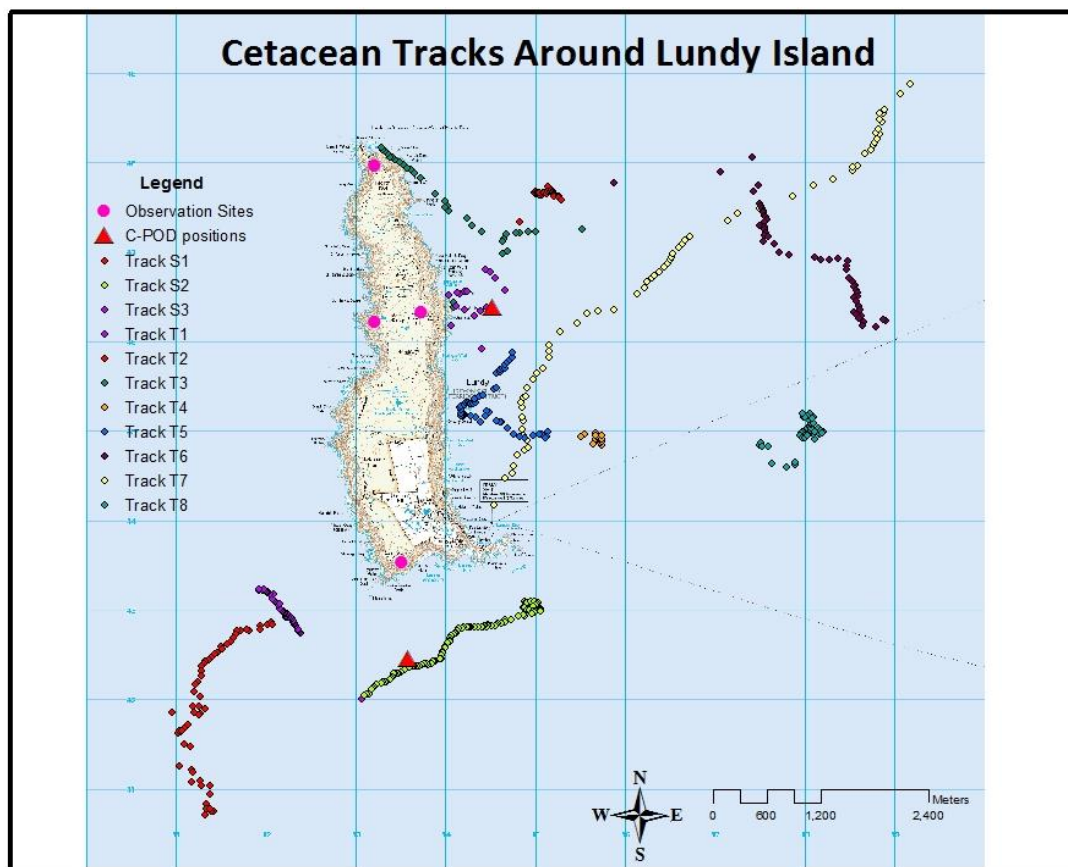


Figure 2. A map of *Delphinus* tracks around Lundy Island with C-POD positions.

Common dolphin was the only odontocete species observed during the visual surveys between May and July 2012. The species was sighted in a total of 4 out of the 32 watches (182 hours) during this period and it was only sighted on the east and south sides of the island (see figure 2). No sightings of porpoises were made at all.

Survey effort was hindered by inclement weather conditions, particularly throughout June which was a considerably wet month, (an average of 182 mm of rain recorded in southwest Britain). Due to the necessity of a clear field of view when conducting surveys, watches had to be abandoned altogether during any precipitation to alleviate potential bias in the results. For this reason survey effort was low, with 19 days being unsuitable for sampling out of the total 51 possible days.

Conclusion:

The use of passive acoustic devices during this study has allowed for the collection of continuous, informative data on the use of the inshore waters of Lundy Island, irrespective of weather conditions and available personnel. These data have shown that porpoises and dolphins use the island throughout autumn and utilise the island in different ways. The tidal state and currents seem particularly important for porpoises. Use of the island by both porpoises and dolphins appears to change in conjunction with water temperatures, which may affect prey availability. Since the collection of these data is independent of environmental conditions, the ongoing use of C-PODs to monitor the use of Lundy by small odontocetes, within and between tidal states, seasons and years will provide a valuable contribution to understanding the basic biology of these animals as well as a monitoring tool. If utilised effectively and combined with supplementary visual observations, such passive acoustic devices facilitate the collection of data necessary to meet the conservation and management requirements of odontocete species.

Future work and recommendations:

Better utilisation of the C-PODs will allow for more in depth analysis to be achieved in future investigations. The present study was limited to only ~12 weeks of out of the possible 12 months of recording time because the C-PODs were not recovered once battery life had expired. If longer, continuous data sets were available seasonal and inter annual variability could be investigated in depth. Such acoustic data sets would benefit from supplementary long term visual observations, where possible. This would allow for more accurate species identification and any error in acoustic data to be recognised, along with the potential for behavioural state to be assessed from direct observations. Considering the proven effectiveness of C-PODs for such surveys, additional devices would be of benefit to future investigations. In particular, as the majority of acoustic detections were made in the tidal rip at the south of the island, an additional C-POD at the northern end of the island, which experiences similar conditions, would be of benefit. It would be sensible to place a further device off the western coast of the island, which is more exposed resulting in a poorer sea state, thus limiting the reliability of visual surveys from westerly observation advantages. Placing C-PODs around each coast of the island would further allow for more comprehensive site comparisons and would give a representation of odontocete use of the whole island.

Continuation of the work presented here could be used in a BACI framework to investigate the impacts of wind farm developments on similar odontocete populations. If this were achievable, it would provide a valuable contribution to the currently poor understanding of the long term effects such developments have on cetacean populations. The environmental factors which were found to limit visual surveys further emphasises the usefulness of C-PODs and the necessity for their continued use and maintenance.

Annex C.



VALMER Briefing (Andy Bell)

- VALMER is part-funded by the Interreg IV A ‘Channel’ Programme project, and runs for two years, seven months from September 2012 to March 2015.
- The main aim is to evaluate how effective marine ecosystem service valuation can contribute to enhanced marine planning and management in the Western Channel.
- Ecosystem service valuation has the potential to contribute to improved marine management – but we are still not sure how. Testing methods is crucial to move the science and management forward for practical application.
- There are 11 partners in VALMER, all focused around the Western Channel Region in both the UK and France:

Plymouth University	Agence des Aires Marines Protégées
Cornwall Council	Devon County Council
Dorset County Council	IFREMER Brest
Le Syndicat Intercommunal d’Aménagement du Golfe du Morbihan	Marine Biological Association
Plymouth Marine Laboratory	University of Brest
University of Pierre and Marie Curie, Roscoff	

- There are six main phases, or work packages:

Phase 1: Assessing and valuing marine ecosystems

Phase 2: Developing data support for VALMER

Phase 3: Building scenarios for ecosystem service valuation

Phase 4: Applying marine ecosystem service valuations to improve marine planning

Phase 5: Communication and stakeholder engagement

Phase 6: Project management

- There are six case study sites (Figure 1) and these are central to all of these work packages as they will determine the valuation framework, the type of data required and the scenarios which will be used to test the framework in the field. Equally important, they are also the key link between the science and the people who live and work in the area.
- We do not have the capacity to undertake a comprehensive assessment of all the coastal and marine ecosystem services provided within the biosphere site. It would be great if we could do this, but we don’t have the manpower.
- This means that we would need to focus on one particular area, which could either be a specific service, which we look at across the site, or a particular habitat within the site, for which we would evaluate as many services as possible.

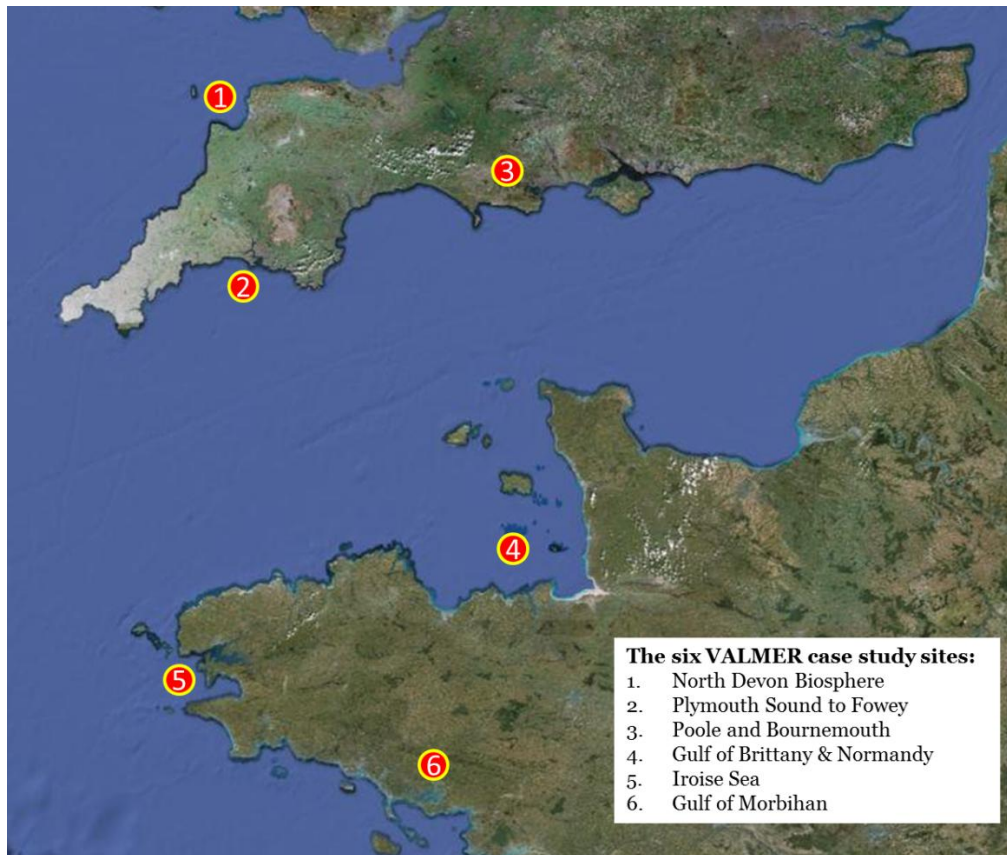


Figure 1: VALMER Case Study Sites.

- We have some internal objectives, which are to try to cover as broad a range of services and valuation methods as possible within the project whilst also trying to ensure good links between the French and English sites. This has led to some suggestions of what we could cover:
 1. Renewables. Particularly the potential for tidal stream/wave energy within the site.
 2. Fisheries. Particularly non-quota species (crab, lobster, cephalopods).
 3. Kelp. With the potential increasing role of algal biofuels, we thought it could be interesting to look at the existing stocks/flows of services from kelp coupled with the development of kelp harvesting as an economic activity (although our phone conversation confirmed there is little kelp in the North Devon Biosphere).

However, we are very keen that the service/habitat on which we focus is of particular relevance to the management of the biosphere area, and so are open to other suggestions. The biodiversity offsets work taking place in North Devon at the moment could be a really interesting case study.